

## 6.1 Regional Green Growth Index

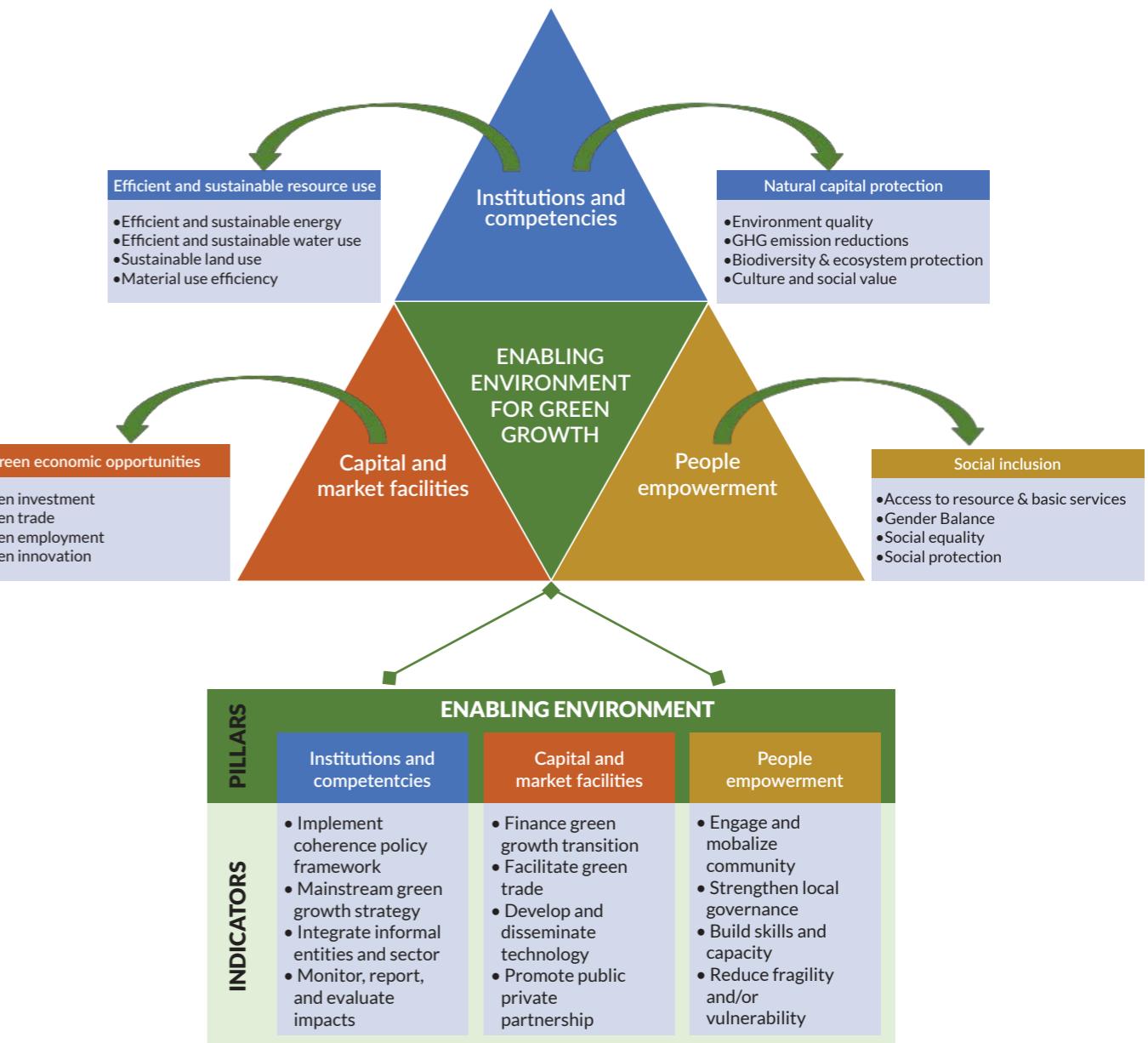
### 6.1.1 African Green Growth Index

**Collaborator: African Development Bank (AfDB)**

GGGI is collaborating with the AfDB to develop the second phase of the African Green Growth Index by applying GGGI's conceptual framework for green growth. The first phase or pilot version of the African Green Growth Index was developed in 2015 (AfDB, 2015). Through the collaborative project, two main improvements were identified – addition of indicators for green economic opportunities and dimension on enabling environment, considering the regional social, economic, and environmental contexts. The conceptual

and indicator frameworks for enabling environment have been developed (Figure 20), with the former identifying the links of the enabling environment pillars (or indicator categories) to the four dimensions of the Green Growth Index and the latter providing guidance for the selection of the indicators for these pillars. The next steps ahead will be to (1) identify quantifiable indicators for institutions and competencies, capital and market facilities, and people empowerment, (2) conduct stakeholder dialogues to validate the relevance of the indicators to policy, (3) inventory and collect data for the validated indicators, (4) identify proxy variables for indicators with insufficient data, (5) compute the Green Growth Index (to include additional indicators for green economic opportunities and enabling environment), (6) conduct expert consultation through online survey to collect feedback on the African Green Growth Index, (7) publish the report on the Index, and (8) conduct capacity building to transfer Index model and database to the AfDB.

Figure 20 Conceptual and indicator frameworks for the enabling environment



## 6.1.2 OECS Green Growth Index

### Collaborators: Organisation of Eastern Caribbean States (OECS) Commission and GGGI OECS Office

The Eastern Caribbean countries have a very high ratio of sea to land space. The OECS Commission has established several regional frameworks related to the blue economy and ocean space planning to support these countries (e.g. OECS Blue/Green Economy Strategy, Eastern Caribbean Oceanscape Plan). Currently, there is no coherent measurement tool to track and monitor the goals and actions included in these frameworks and other related environmental sustainability frameworks (e.g. St Georges Declaration, Biodiversity Framework). As a result, OECS has expressed a desire to incorporate the indicators related to the blue economy into the Green Growth Index. The collaborative project, which activities were initiated this year, includes the review of relevant regional frameworks and assessment of how blue economy indicators can be incorporated into the Green Growth Index, conduct of a series of educational webinars/stakeholder dialogues to inform OECS members and gauge interest from stakeholders on the use of the Index, assessment of data availability for the blue economy indicators agreed during the dialogues, and computation of the index for blue economy dimension to complement the Green Growth Index.

## 6.2 National Green Growth Index

### 6.2.1 Uganda Green Growth Index for the National Development Plan

#### Collaborators: Uganda National Planning Authority (NPA), GGGI Country Office Uganda

Uganda's NPA in partnership with the European Union and GGGI is undertaking a review of the Third National Development Plan (NDPIII) draft Programme Implementation Action Plans to integrate Green Growth principles, interventions, and outputs. The main objective of the review is to mainstream green growth and climate change into the entire NDP III document and results framework. Further to mainstreaming, GGGI is supporting the NPA to develop a national Green Growth Index based on the indicators identified for each NDPIII Programme, classifying them into green growth indicators, "potential" green growth (PGG) indicators, and enabling environment indicators. The green growth indicators are indicators that could be included in one of the four dimensions of the Green Growth Index. The PGG indicators are indicators that could be included if they are modified to emphasize "green" components or aspects, for example, identifying green exports from the total exports and considering eco-tourism or sustainable tourism from the tourism sector, etc. These indicators are included in the classification for possible consideration in the preparation of the next NDPs as data become available. The enabling environment indicators are useful indicators to enable green growth transition. The assessment of the indicators according to these three classifications has been

completed, which will guide the collection of data to be used to compute the Index.

### 6.2.2 Assessment of COVID Recovery Packages in OECS Countries

#### Collaborators: OECS Commission and GGGI OECS Office

OECS member countries have been hard-hit by the economic effects of the COVID-19 pandemic and thus are implementing policies to mitigate these effects. The countries are in various stages of developing response strategies. For instance, Saint Lucia published its Economic Recovery and Resilience Plan in July 2020, while Antigua and Grenada are in the process of drafting recovery plans. In order to encourage the development of recovery packages that also contribute to green growth and sustainability goals, OECS is interested in using the Green Growth Index to assess the effects of these strategies from a green growth perspective.

GGGI's Green Growth Index can be effectively used as a tool to assess the impacts of COVID-19 recovery plans because its framework is aligned to SDG indicators and targets, allowing for measurement of social, economic, and environmental co-benefits. Moreover, many of the green growth indicators are linked to the COVID-19 features and/or impacts. For example, zoonotic condition is impacted by habitat loss (due to unsustainable land use and biodiversity loss), increased mortality is caused by access to healthcare, job loss is affected by the degree of economic diversification, etc. The multidimensional framework of the Green Growth Index facilitates assessments of impacts of policy decisions and actions related to COVID-19 recovery on various environmental, economic, and social sustainability indicators. A two-step approach of green growth performance and green co-benefits assessments can be used to evaluate the co-benefits from building COVID-19 resilience through green new deals, national green growth plans, or climate action strategies. The assessment will involve an inventory of green growth indicators relevant to COVID-19 features and/or impacts, alignment of these indicators to the Green Growth Index framework, collection and validation of time-series data, and computation and assessment of Index scores.

### 6.2.3 Green Growth Performance in Country Planning Frameworks

#### Collaborators: GGGI Green Growth Planning & Implementation and Country Offices

GGGI's Country Planning Framework (CPF) is a 5-year in-country delivery strategy that identifies GGGI's contribution to green growth in member and partner countries in alignment with GGGI's Strategy 2030. The CPF process entails an assessment of green growth challenges, opportunities, and enabling conditions, identification of GGGI's in-country comparative advantage, and elaboration of priority interventions and intended results. Figure 21 presents examples of the graphics of the GGGI Index that are included in the CPFs to highlight the current green growth trends and performance against other relevant countries, by region and economic development level. These results show where the policy should focus and the opportunities that can be created to improve

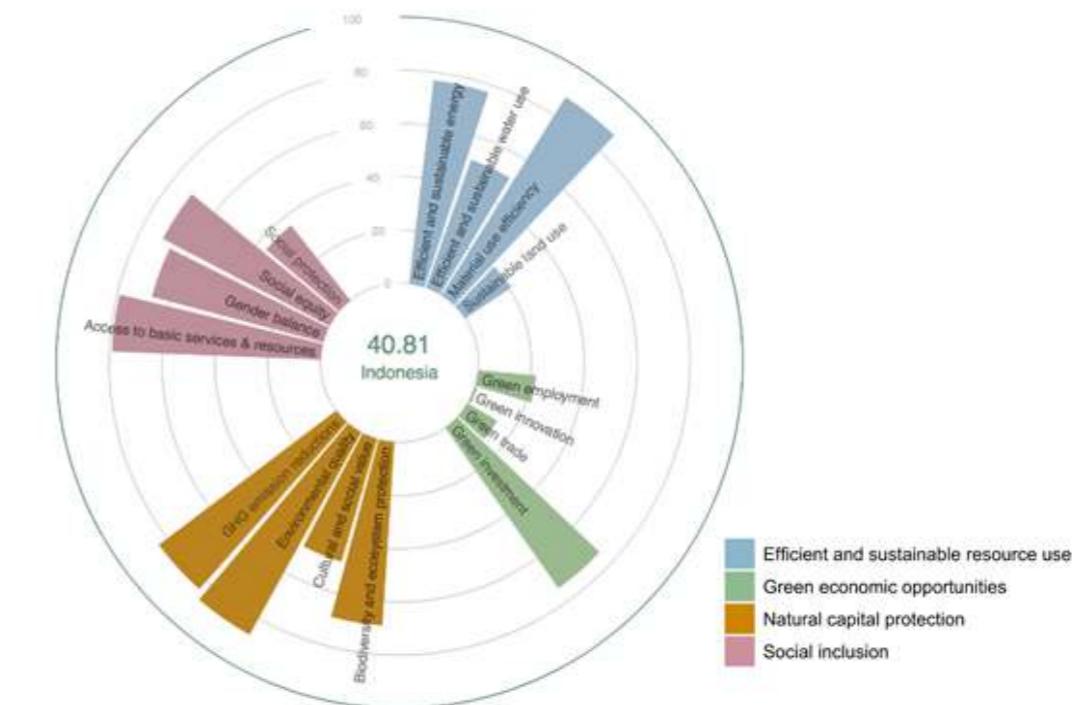
the performance on green growth indicators, as shown by the following excerpts from the Indonesia CPF:

"Indonesia has generally performed well with an overall score of 40.81 in 2019, ranking 16 among 35 Asian nations. Among the four green growth dimensions, performance in achieving targets in green economic opportunities is the poorest (Figure 21A). In comparison, Indonesia's score at 12.30 is below the score of most south-east Asian countries, representing an underperformance in green investment, green trade, green jobs, and green innovation (Figure 21B)."

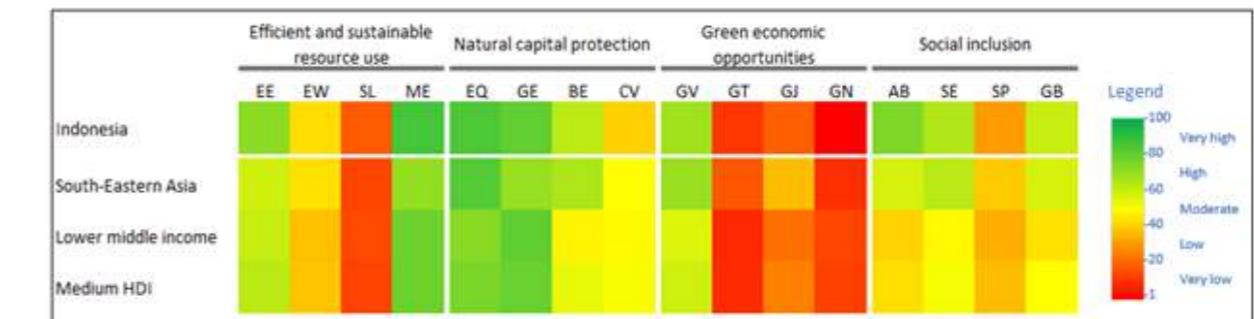
Herein, perhaps, lies Indonesia's biggest opportunity to achieve its national development targets: Green growth strategies to accelerate investments and innovation to create and target new economic opportunities, reinforcing the trajectory towards a sustainable, socially inclusive economy."

**Figure 21 Example of graphics on Green Growth Index in Country Planning Framework**

**A. Distance to targets for the Green Growth Indicators**



**B. Performance dashboard of indicators for the green growth indicators**



Legend:

Efficient and sustainable energy (EE), efficient and sustainable water use (EW), sustainable land use (SL), material use efficiency (ME), environmental quality (EQ), GHG emissions reduction (GE), biodiversity & ecosystem protection (BE), cultural and social value (CV), green investment (GV), green trade (GT), green jobs (GJ), green innovation (GN), access to basic services and resources (AB), gender balance (GB), social equity (SE), and social protection (SP).

## 6.3 Green Growth Simulation Tool

GGGI has developed both the Green Growth Index and Simulation Tool to support the integrated assessment of green growth policies and their impacts on green growth performance. The index measures the country-level performance based on a common set of metrics in four green growth dimensions. The Simulation Tool allows the users to enhance their knowledge on how the different policy options, not only within these dimensions but also across sectors, influence a country's green growth performance. The validity of the underlying models and assumptions of the Simulation Tool depends on the policy relevance of the indicators that frame the Green Growth Index. Moreover, this Simulation Tool not only enhances users' understanding of green growth but also allows an interactive learning experience. Users can manipulate input indicators, experiment with different policy choices, and simulate the impacts of their choices on green growth performance through their projected effects on output indicators.

The development of the Simulation Tool follows three phases:

1. Phase 1 consists of identifying and applying models which provide interlinkages among the indicators and require available data online. Models that require data to be collected from countries were kept first for use in Phase 2.

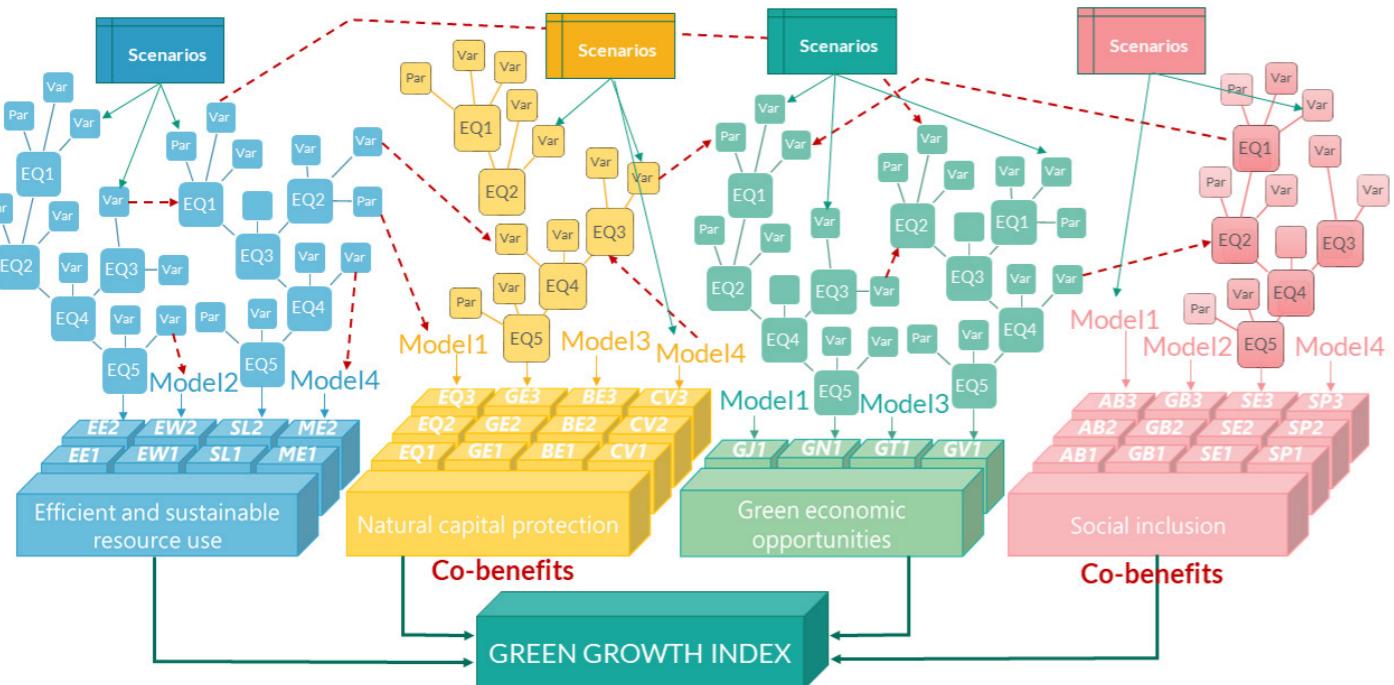
2. Phase 2 consists of conducting stakeholder dialogues to create/identify policy scenarios and collect feedback on the Phase 1 Simulation Tool. It also aims to improve the Phase 1 Simulation Tool by adding models that require data collected from agencies and integrating feedback from stakeholder dialogues.

3. Phase 3 consists of finalizing models and scenarios by adopting lessons learned from different country applications of the Phase 2 Simulation Tool and standardizing them for more global applications.

During the Phase 1, which was completed in 2020, over 125 online tools related to green growth were reviewed to determine the best practices for developing online simulation tools and models. Also, over 200 peer-reviewed articles were assessed to identify the models that can be used in the Simulation Tool. A comprehensive inventory of models was conducted to classify them for use in Phase 1 and Phase 2 development of the Simulation Tool. Figure 22 shows the interlinkages of different models, which are relevant for the 36 indicators of the Green Growth Index, built and validated through the following steps:

1. Collection of online data and running the model in Excel
2. Validation of results by comparing to actual data
3. Preparation of flow diagrams to represent the models
4. Translation of the equations run in Excel into Python codes
5. Validation of results consistency and flow diagrams

**Figure 22** Interlinkages of models of indicators across different green growth dimensions



For Phase 1, the case study countries include Hungary, Mexico, and Uzbekistan. In this study, policy and investment scenarios were created for different sectors, which include:

- Energy – reducing coal production, increasing renewable supply (e.g., solar, wind)
- Transport – increasing electric vehicle, using efficient transport technology
- Water – implementing water pricing policies, improving irrigation technology efficiency
- Agriculture – reducing production losses, reducing fertilizer use
- Forestry – increasing reforestation or reducing deforestation, applying climate smart forestry policies
- Waste – increasing recycling rate, reducing food waste

The Phase 2 Simulation Tool will also include social (e.g. population, migration), economic (e.g. GDP growth, consumption), and climate (e.g. temperature, precipitation) scenarios. The Simulation Tool thus covers not only multiple sectors, but also multiple systems. It is based on system dynamics models that measure the impacts of policy and investment scenarios on important green growth indicators for efficient and sustainable resource use (i.e. energy, water, land, and materials), natural capital protection (i.e. environmental quality, GHG emissions reduction, biodiversity and ecosystem protection, and social and cultural value), green economic opportunities (i.e. green employment, investment, trade, and innovation), and social inclusion (i.e. access to basic services, gender balance, and social equity and protection). Moreover, it is an integrated assessment tool that can assess the impacts of policies and investments from green deals or stimulus packages on specific sectors they intend to support and the co-benefits on other parts of the society, particularly the poor and vulnerable (i.e. social inclusion). The Simulation Tool will have the following features:

1. It can simulate long-term progress relative to policy and investment scenarios from present (baseline) year to 2030 and 2050.
2. It is tailored to the social, economic, and environmental contexts of the country to improve long-term assessments of green growth performance.
3. It is developed through a participatory approach to enhance the relevance of the results for national policy and planning, including priorities and timeline for achieving the development goals.
4. It can be applied in close collaboration with the relevant government agencies to facilitate the transfer of knowledge and product.

### 6.3.1 COVID Green Recovery in Hungary

#### Collaborators: Hungary GGGI Country Office and Ministry for Innovation and Technology

In the context of the European Green Deal and Hungary's national climate neutrality commitment, GGGI has delivered various low-carbon scenarios using the Green Economy Model (GEM) over the past months. These scenarios are showing positive impacts on GDP and green employment. However, the critical question is how these low-carbon scenarios are aligned with the SDGs which governments are committed to achieve by 2030 and beyond. This question could further motivate the uptake of green deal packages that contribute to reducing not only GHG emissions, but also biodiversity loss and social inequality. By assessing the co-benefits using the Simulation Tool, it will be possible to determine the potential contribution of the green deal on reducing biodiversity loss and social inequality. These co-benefits are added social, economic, or environmental benefits above and beyond the direct benefits of reducing GHG emissions and the economic indicators already covered in the analysis performed with GEM. They can include, for example, improving gender balance, access to basic services, management of natural resources, etc. The project activities will include stakeholder dialogues for scenario building, data collection and model application, and capacity building on the use of the Tool.

### 6.3.2 Green Growth Performance in Uganda

#### Collaborators: Uganda NPA, GGGI Country Office Uganda

The third results framework, which is within a 30-year framework to achieve the Uganda Vision 2040, contains a set of objectives, key result areas, and targets, aligning to the stated theme of the NDP III. The ongoing collaboration on developing the Green Growth Index will be complemented by the application of the Simulation Tool to assess the potentials for achieving the 2040 visions. The application of the Phase 1 Simulation Tool for Uganda is currently ongoing. The following activities will include: (1) collection of data and addition of the kept aside models in developing the Phase 2 Simulation Tool; (2) conduct of stakeholder dialogues with policymakers to identify most relevant policy/investment scenarios; (3) collection of data to implement the scenarios identified from the dialogues; (4) application, validation, and analysis of results from the application of Phase 2 Simulation Tool; and (5) conduct of capacity building on the use of the Tool to transfer knowledge to the policymakers.